

APPLICATION NO. 09/888,972
DOCKET NO. P1045/N8801

COMPLETE LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously amended) A process for producing a heat spreader or heat pipe for an electronic component, comprising forming a laminate comprising a plurality of flexible graphite sheets which comprise graphene layers; and directionally aligning the graphene layers of the laminate wherein the laminate exhibits a thermal anisotropic ratio of at least about 70.

Claim 2 (original) The process of claim 1 wherein directionally aligning the graphene layers of the laminate is effected by the application of pressure.

Claim 3 (original) The process of claim 2 wherein the application of pressure is effected after the formation of the laminate from the plurality of flexible graphite sheets.

Claim 4 (previously amended) The process of claim 2 wherein the graphene layers of the flexible graphite sheets which make up the laminate are subjected to the application of pressure prior to the formation of the laminate, by increasing the pressure applied to the sheets during the calendering process.

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Claim 5 (original) The process of claim 2 wherein the application of pressure to the laminate results in an increase in the density of the laminate.

Claim 6 (original) The process of claim 4 wherein the increase in the pressure during the calendaring process results in the formation of flexible graphite sheets having a greater density.

Claim 7-17 (canceled)

Claim 18 (previously amended) A method of making a heat spreader or heat pipe comprising

- a. forming a plurality of natural graphite flakes into two or more sheets of flexible graphite; and
- b. forming said two or more flexible graphite sheets into a unitary article, wherein said article exhibits a thermal anisotropic ratio of at least about 70.

Claim 19 (previously presented) The method according to claim 18 wherein said forming said two or more flexible graphite sheets into said unitary article comprises forming a laminate of said two or more flexible graphite sheets and applying a sufficient amount of pressure to said laminate such that a density of said unitary

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article after said applying comprises more than a density of said laminate prior to said applying.

Claim 20 (previously amended) The method according to claim 19 wherein said applying comprises calendering said laminate.

Claim 21 (previously presented) The method according to claim 18 wherein said forming said two or more flexible graphite sheets into said unitary article comprises applying pressure to said two or more sheets of flexible graphite.

Claim 22 (previously presented) The method according to claim 21 wherein said applying pressure to said two or more sheets of flexible graphite comprises calendering said sheets.

Claim 23 (previously presented) The method according to claim 21 wherein said applying pressure to said two or more sheets of flexible graphite comprises die pressing said sheets.

Claim 24 (previously presented) The method according to claim 21 wherein said applying pressure to said two or more sheets of flexible graphite comprises reciprocal platen pressing said sheets.

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Claim 25 (previously presented) The method according to claim 18 wherein said forming of said plurality of natural graphite flakes into said two or more sheets of flexible graphite comprises treating said plurality of natural graphite flakes with an intercalant, thereby forming particles of intercalated graphite.

Claim 26 (previously presented) The method according to claim 25 wherein said forming said plurality of natural graphite flakes into said two or more sheets of flexible graphite comprises exfoliating said particles of intercalated graphite, thereby forming exfoliated graphite.

Claim 27 (previously presented) the method according to claim 25 further comprising compressing said exfoliated graphite, thereby forming said two or more sheets of flexible graphite.

Claim 28 (previously presented) The method according to claim 18 further comprising resin treating at least one of said two or more sheets of flexible graphite.

Claim 29 (previously amended) The process of claim 1 further comprising intercalating natural graphite flakes to form said flexible graphite sheets.

Claim 30 (amended) The process of claim 1 wherein the laminate has an in-plane in-plane thermal conductivity of at least about 350 W/m°C.

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Claim 31 (amended) The method of claim 18 wherein the article has ~~an~~ ~~d~~ and thermal conductivity of at least about 350W/m°C.